Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	
Framework for Next Generation 911 Deployment	PS Docket No. 10-255
Facilitating The Deployment Of Text-To-911 And Other NG911 Applications	PS Docket No. 11-153

COMMENTS OF T-MOBILE USA, INC.

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March 11, 2013

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I. INTRODUCTION AND SUMMARY

T-Mobile USA, Inc. ("T-Mobile") continues to support advancement of technologies that allow people to access 911 in appropriate and effective ways. To that end, it is proud to be part of the voluntary commitment among the four nationwide wireless carriers to provide text-to-911 service by next summer.[1] The voluntary commitment not only has the support of the Association of Public-Safety Officials International ("APCO") and National Emergency Number Association ("NENA"), both of whom were signatories to the agreement, but also of the Competitive Carrier Association, which has noted that it hopes to come to a similar resolution among its members.[2] T-Mobile encourages the Commission to use the voluntary commitment—which represents an industry-public safety consensus—as its basis for implementation of an interim solution for text-

[1] Letter from APCO International, AT&T, NENA – The 9-1-1 Association, Sprint Nextel, T-Mobile USA, and Verizon, to FCC Chairman Julius Genachowski (Dec. 6, 2012), *available at* http://c.ymcdn.com/sites/www.nena.org/resource/resmgr/GovAffairs/121206_-_Voluntary_Commitmen.pdf ("Voluntary Commitment Letter").

[2] Reply Comments of Competitive Carriers Association, PS Docket Nos. 11-153 & 10-255, at 1 (filed Feb. 8, 2013).

to-911 until carriers and Public Safety Answering Points ("PSAPs") have migrated to an IP-based Next Generation 911 ("NG911") environment.

II. THE COMMISSION MUST RECOGNIZE THAT THE VOLUNTARY COMMITMENT REPRESENTS AN INTERIM SOLUTION.

The voluntary commitment among the nationwide wireless carriers represents an important step forward for the advancement of emergency communications. But this industry-public safety agreement does not obviate the technical concerns with the use of Short Message Service ("SMS") for reaching 911. Industry and public safety are working together to develop the necessary standards that will underpin the interim solution, but the Commission cannot ignore the inherent shortcomings of SMS. It must address the technical limitations as it moves forward to implement a regulatory framework for an interim text-to-911 solution, even while it recognizes the importance of ongoing standards work.

A. The Commission Should Take a Realistic Approach with Respect to the Goals of an Interim SMS-to-911 Solution.

Although SMS-to-911 promises to provide yet another means of access to emergency services until the NG911 transition, T-Mobile cautions all parties to be cognizant of the technology's limitations. As T-Mobile has pointed out in previous proceedings,[3] SMS is a best-effort service with no native means of auto-location and no guarantee of successful transmission. Additionally, while several trials of SMS-to-911 have taken place and are ongoing, they have been of limited scope, *e.g.,* routing messages to one PSAP, making it difficult to draw any definitive conclusions regarding widespread implementation.

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[3] *See, e.g.*, Comments of T-Mobile USA, Inc., PS Docket No. 10-255, at 8-13 (filed Feb. 28, 2011); Reply Comments of T-Mobile USA, Inc., PS Docket No. 10-255 (filed March 14, 2011); Comments of T-Mobile USA, Inc., PS Docket Nos. 11-153 & 10-255, at 10-13 (filed Dec. 12, 2011); Reply Comments of T-Mobile USA, Inc., PS Docket Nos. 11-153 & 10-255, at 3-14 (filed Feb. 9, 2012).

For instance, while the i wireless trial in Black Hawk County, Iowa, might be considered successful with respect to reliability—the county reports no delayed or dropped messages[4]—it is more difficult to draw a similar conclusion regarding location determination. Even after the trial's expansion to cover all i wireless 911 texts sent in Iowa, those messages continue to be routed to Black Hawk County regardless of origination location and call-takers there are required to relay them to other PSAPs when appropriate.[5] Similarly, emergency services in Durham, North Carolina, have expressly noted that users must provide their location information in any text to 911, as "the Durham Emergency Communications Center will not be able to access the cell phone location or speak with the person who is sending the text."[6] The Vermont trial has the same requirement: "texters should include the location of the emergency in the first message."[7]

Albeit not an optimal solution, the carriers that have signed on to the voluntary commitment are prepared to implement workarounds to provide coarse location information, such as cell site, via secondary methods in order to route 911 texts to appropriate PSAPs for subscribers on their home network. However, those workarounds have not been tested on a large scale, involving multiple PSAPs and carriers. Furthermore, SMS, by itself, is not capable of providing more granular location information akin to E911 Phase II data. To the extent that the Commission's conclusions regarding the benefits of text-to-911 rely on the limited information

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4 *See Facilitating the Deployment of Text-to-911 and Other Next Generation 911 Applications, Framework for Next Generation 911 Deployment*, Further Notice of Proposed Rulemaking, PS Docket Nos. 11-153 & 10-255, at ¶ 11 ("FNPRM").

5 *See id.* ¶ 11. Though the Commission notes that i wireless is a T-Mobile affiliate, *id.*, T-Mobile has no network or technology planning relationship with i wireless.

6 Press Release, "Durham 911 Center Launches Texting Trial for Emergency Help," Aug. 3, 2011, http://www.intrado.com/news/press/2011/08032011.asp.

7 Press Release, "Vermont Enhanced 911 Board Launches Statewide Text to 911 Trial for Emergency Help," Apr. 18, 2012, http://e911.vermont.gov/sites/e911/files/pdf/E911-Verizon-Text2911-PR.pdf.

thus far available,[8] T-Mobile encourages the Commission to temper its expectations and ensure that its regulatory framework acknowledges the inherent limitations of SMS for emergency communications.

B. Interim Text-to-911 Will Likely Not Be Available to All Consumers Before the NG911 Transition.

While the four national carriers have committed to implement text-to-911—and the Commission proposes to extend that commitment to all carriers—it is uncertain that text-to-911 will be available *to all* consumers before the NG911 transition. The Commission is understandably concerned about user experience consistency when considering extending the voluntary commitment to all carriers, but the user experience may be inconsistent regardless for two reasons.

First, PSAPs are currently under no mandate to make the necessary changes to accept text messages during the interim period, nor are they required to designate an alternate 911-text-receiving PSAP. Some PSAPs may decline to make the required changes to their equipment and processes required by interim text-to-911 independently of the transition to IP networks.[9] So even if all carriers are required to implement text-to-911 routing, there will still be instances

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[8] T-Mobile is similarly concerned about the Commission's reliance on the Cardiac Study. *See* FNPRM ¶¶ 69-72. The Cardiac Study looked at the benefit of precise location information for voice calls. But it is clear that precise location information is not feasible with SMS-to-911. *See, e.g.*, 4G Americas, *Texting to 9-1-1: Examining the Design and Limitations of SMS*, at 18 (Oct. 2010), *available at* http://www.4gamericas.org/documents/SMS%20to%20911%20White%20Paper%20Final%20October%202010.pdf ("4G Americas White Paper").

[9] The Commission asks specifically about assertions that PSAPs will need to upgrade their CPE for interim text-to-911. *See* FNPRM ¶¶ 130-133. T-Mobile's understanding is that even browser-based solutions like that offered by TCS may require upgrades by those PSAPs whose call takers do not have access to web browsers or the Internet (through policies and configurations that some PSAPs have put in place to avoid distractions). In those cases, not only would equipment need to be replaced or upgraded, but policies and procedures would also need to be modified—steps that PSAPs may be reluctant to do for a short-term solution before NG911 implementation takes place.

where consumers will be unable to reach public safety via text message. Second, and as discussed in more detail below, consumers who are roaming onto another carrier's network will also not be able to reach 911 via text. Thus the Commission's assertion that a mandatory regulatory framework will "provide greater certainty to consumers regarding text-to-911 availability, functions, and usage"[10] may not necessarily prove to be the case.

III. THE COMMISSION MUST CAREFULLY CONSIDER THE IMPLICATIONS OF ITS PROPOSED MANDATES.

A. Questions Regarding Over-the-Top Location Belong in the Ongoing NG911 Proceeding.

As T-Mobile has noted on the record, carriers cannot be held accountable for third-party text-to-911 activities, or for routing messages from those over-the-top applications to PSAPs. T-Mobile simply does not have visibility into customer activity using a third-party over-the-top application.[11] To the extent the Commission considers over-the-top providers in its interim text-to-911 framework, it should ensure that these providers are independently responsible for the service they provide. Other questions about location functionality for "interconnected text providers" are more appropriately left to the broader E911 and NG911 proceedings. Auto-location concerns regarding over-the-top applications have been discussed at length on the record in the broader NG911 proceeding.[12] Transporting those discussions to this proceeding, which is more narrowly focused on the issues directly related to an interim text-to-911 solution, would be counterproductive.

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[10] FNPRM ¶ 47.

[11] *See* Letter from John Nakahata, Wiltshire & Grannis LLP, to Marlene Dortch, Secretary, Federal Communications Commission, PS Docket Nos. 11-153 & 10-255 (Oct. 11, 2012).

[12] *See, e.g.*, Comments of T-Mobile USA, Inc., GN Docket No. 11-117, PS Docket No. 07-114, WC Docket No. 05-196, at 3-5 (filed Oct. 3, 2011); Reply Comments of T-Mobile USA, Inc., GN Docket No. 11-117, PS Docket No. 07-114, WC Docket No. 05-196, at 2-3 (filed Nov. 2, 2011).

B. The Commission Should Not Require Major Network Changes for Interim Text-to-911.

The Commission should not impose mandates for interim text-to-911 on carriers that would require costly or extensive network upgrades. Thus, for instance, any requirement to implement network changes to permit location information to be transmitted with roaming SMS messages should be avoided. As the Commission notes, the voluntary commitment does not extend to messages sent by roaming subscribers.[13] This is a fundamental technical limitation of SMS. Furthermore, mandating such changes may have a negative affect on carriers' implementation of NG911.

Though T-Mobile may be able to route its subscribers' SMS message based on secondary location methods (*e.g.*, cell site information) when they are on T-Mobile's network, it will not have that secondary information when its subscribers are roaming on another carrier's network. Unlike voice calls to 911, SMS messages to 911 are handled by the *home* network, not by the *visited* network.[14] Nor do SMS messages contain location information in the messaging stream that can be transmitted along with the message. Furthermore, routing of SMS messages to PSAPs will be done generally by third-party text-to-911 vendors. It is almost guaranteed that carriers will select different 911 text vendors, further complicating any attempt to effectively route emergency messages for roaming customers.

Many proponents have called for a location requirement on all SMS messages, including roaming messages, despite the technical difficulties involved.[15] But requiring carriers to develop

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[13] FNPRM ¶ 124.

[14] *See* 4G Americas White Paper at 19 ("If [the user] was roaming into another wireless operator network outside his home wireless operator's network, then the MO text message is routed to [the user's] home wireless operator's SMSC, no matter where in the world that SMSC is located.").

[15] *See* FNPRM ¶ 125 (citing comments of NENA and APCO).

a process and architecture that would enable location information to be transmitted with roaming SMS messages would extend far beyond the voluntary commitment agreed to by both industry and public safety, which excluded changes to the SMS process. Moreover, it would be a fundamental misallocation of resources, resources that could be better directed towards developing next generation technologies.[16] Indeed, the ATIS SMS-to-911 standard that is currently expected to be approved later this month and which serves as the technical basis of the voluntary commitment specifically does not include roaming for SMS messages to 911.[17] The Commission should not impose mandates that would require changes to what all agree will be an interim solution. Attention and effort should be focused on longer-term 911 messaging solutions that are part of NG911 implementation.

C. The Commission Should Sunset TTY Requirements for Wireless Carriers Implementing Text-to-911 and Other Alternatives.

The Commission's goal in supporting both interim text-to-911 and messaging services that will be adopted in an NG911 environment should be to take a holistic approach to ensuring access by individuals with disabilities. To that end, the Commission should sunset its TTY compatibility requirements for those carriers that have implemented other mechanisms for permitting communication with PSAPs, such as SMS-to-911, IP Relay, and Video Relay Service ("VRS").

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[16] *See* Voluntary Commitment Letter at 3 ("A voluntary SMS-to-9-1-1 solution will be limited to the capabilities of the existing SMS service offered by a participating wireless service provider on the home wireless network to which a wireless subscriber originates an SMS message. SMS-to-9-1-1 will not be available to wireless subscribers roaming outside of their home wireless network.").

[17] *See* Joint ATIS/TIA Native SMS to 9-1-1 Requirements and Architecture Specification, § 4 (working document) ("Support of SMS-to-9-1-1 for US subscribers roaming between US wireless operator networks is for future study. The subscriber will receive an SMS response message indicating they need to place a voice call to 9-1-1.").

Wireless TTY is a legacy service that has served an important role, but that requires the consumer to have specialized CPE, the use of which is believed to be in rapid decline.[18] Mobile users with hearing loss already have access to relay services (IP Relay and VRS), and when text-to-911 is implemented per the voluntary commitment, those users will also have access to SMS-to-911. SMS is available on all handsets and IP Relay is supported on any 3G or 4G handset. VRS is available on many handsets as well. In short, by next summer, deaf, hard of hearing, and speech-impaired users will have access to multiple means of contacting 911 other than TTY from their mobile devices. Those means will be less cumbersome, more familiar, easier to use, and not require the user to have additional CPE.

As IP networks are implemented, moreover, other technologies such as real-time-text may even replace prolific use of both SMS and certain relay services. In many cases, adoption of real-time-text may at some point render TTY an obsolete technology for wireless users. And, of course, TTY is a PSTN solution that will be retired as the PSTN is decommissioned.

Extending the TTY compatibility mandate without considering the alternative means of communication with PSAPs and technological advancements that are on the horizon will divert resources away from advancing next-generation communications in favor of retrofitting new technologies to fit a legacy system. The Commission should therefore consider sunsetting TTY requirements for any wireless carrier that has implemented a variety of ways for people with disabilities to contact PSAPs, including SMS-to-911, VRS and IP Relay.

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[18] *See* Federal Communications Commission, Emergency Access Advisory Committee, *Report on TTY Transition*, at 7, 11 (March 2013).

IV. CARRIERS SHOULD NOT BE LIMITED IN THEIR ABILITY TO ADDRESS SECURITY CONCERNS.

As T-Mobile noted in its comments in the accelerated portion of this proceeding, the Commission should ensure that carriers can protect their networks when text-to-911 implementation creates risks to their networks. In fact, it is sound engineering practice for carriers to incorporate security into all aspects of network planning, deployment and operation. Furthermore, the nationwide move toward an interoperable public safety broadband network ("PSBN"), which envisions interoperability with NG911 networks,[19] will necessarily include consideration of security issues. Indeed, the Department of Homeland Security has an initiative devoted to PSBN cybersecurity issues.[20] The NENA i3 specification also addresses security, including border control functions.[21] And ATIS and 4G Americas likewise address security issues in their specifications and white papers.[22]

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[19] Middle Class Tax Relief And Job Creation Act Of 2012, Pub. L. 112-96 (2012) ("Act") § 6206(b)(2)(C) (noting that the First Responder Network Authority is required to "promote integration of the network with public safety answering points or their equivalent").

[20] *See* Written Testimony of Roberta Stempfley, NPPD Office Of Cybersecurity and Communications, House Committee on Energy and Commerce, Subcommittee On Communications And Technology Hearing, "Cybersecurity: Threats To Communications Networks And Public-Sector Responses," Mar. 28, 2012, *available at* http://www.dhs.gov/news/2012/03/28/written-testimony-national-protection-and-programs-directorate-house-energy-and ("DHS has begun to examine potential security issues to the NPSBN and is well-positioned to assist FirstNet in building security into the foundation of the network. OEC, for example, is working with several stakeholder groups, including the National Public Safety Telecommunications Council and their established working groups, to discuss security issues for the NPSBN and to develop requirements. We will also leverage NCSD's work in the areas of standards and best practices from the cybersecurity community.").

[21] See NENA, The 9-1-1 Association, *Detailed Functional and Interface Specification for the NENA i3 Solution – Stage 3*, at §§ 5.1 ("Border Control Function"), 6 ("Security"); see also id. § 2.2 ("Of necessity, PSAPs will be connected, indirectly through the ESInet, to the Internet to accept calls. This means that PSAPs will likely experience deliberate attack on their systems. The types of vulnerabilities that NG9-1-1 systems must manage and protect against will fundamentally change and will require constant vigilance to create a secure and

It is clear that carriers cannot ignore the potential threats to their networks and ESInets—both from domestic hackers and from terrorists seeking to prevent people from being able to contact emergency services. Security concerns are not premature at this stage, as has been suggested.[23] Rather, it would be irresponsible not to include network security planning from the very beginning for both text-to-911 and NG911.

T-Mobile therefore reiterates that in situations where any text-to-911 implementation could permit harm to a carrier's network—via, for instance, a denial-of-service attack, "spoofing," or "flooding"[24]—carriers should be permitted to suspend the service. Where enabling text messages to 911 leaves carriers and PSAPs vulnerable to attack, carriers must be allowed to configure their networks specifically to exclude those messages that create security issues.[25]

V. THE COMMISSION SHOULD FACILITATE THE DEVELOPMENT OF A CONSISTENT LIABILITY STANDARD.

Past federal legislation to ensure that all forms of 911 and E911 are subject to the same liability standards has helped ensure that wireless carriers are protected to the same extent as

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reliable operating environment. NG9-1-1 systems must have robust detection and mitigation mechanisms to deal with such attacks.").

22 *See, e.g.*, Joint ATIS/TIA Native SMS to 9-1-1 Requirements and Architecture Specification, § 6 (working document) ("Support for SMS to 9-1-1 is only required for native SMS originated from CMRS devices. The SMS to 9-1-1 system may block SMS to 9-1-1 messages from originations other than CMRS devices to deal with security issues such as denial of service attacks, fraud, and SMS spam."); *see also id.* at 18 ("However, a wireless operator shall reserve the right to perform spam checking or denial of service attack prevention on some or all received SMS messages terminating on their network from any address, including messages with a value of '911' in the From address field."); 4G Americas White Paper § 3.

23 *See* Reply Comments of the Boulder Regional Emergency Telephone Service Authority, PS Docket Nos. 11-153 & 10-255, at 11-12 (filed Feb. 8, 2013).

24 *See* 4G Americas White Paper §§ 3.1, 3.2, 3.4.

25 This authority is presumed in the ATIS standard for SMS to 911. *See* Joint ATIS/TIA Native SMS to 9-1-1 Requirements and Architecture Specification at 18.

incumbent LECs.[26] Because these standards are based on whatever protections are provided for wireline 911 services, they are necessarily non-uniform and may present difficulties in application to newer technologies and applications, as T-Mobile has pointed out.[27] Wireless services are nationwide and need to be interoperable in all regions, thus this patchwork of liability standards will continue to hamper efforts to implement new technologies and communications services for emergency contact.

The Commission stated in its recently released report on the legal and regulatory framework for NG911 services that it believes Congress should incentivize states to undertake revisions to their liability standards themselves, rather than preempt state regulation in this area.[28] T-Mobile continues to be concerned that state-by-state liability standards—even reformed—will undermine efforts by carriers to deploy text-to-911 (and other new forms of communication with PSAPs). It is therefore crucial that the Commission push for a uniform, nationwide liability protection scheme. The Commission should reconsider its conclusion regarding preemption. And the Commission should ensure that, in the interim, the liability protections of NG911 cover SMS-to-911 as implemented under the voluntary commitment.

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[26] 47 U.S.C. § 615a.

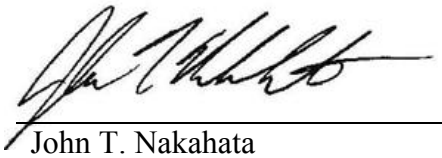
[27] *See* Comments of T-Mobile USA, Inc. PS Docket Nos. 10-255, 11-153, & 12-333, at 9 (filed December 13, 2012).

[28] Federal Communications Commission, *Legal and Regulatory Framework for Next Generation 911 Services*, Report to Congress and Recommendations, § 4.1.5.2 (Feb. 22. 2013) ("In light of these considerations, we believe that Congress should focus on creating incentives for states themselves to undertake revisions of their liability regimes, perhaps in conformance with standardized guidelines or model legislation developed by stakeholders. For example, Congress could require that any federal NG911 grants be conditioned on state adoption of standardized guidelines for liability protection developed by stakeholders. In this regard, we also concur with commenters that liability protection should be extended to any entity that is providing NG911 services on a voluntary basis as a means to incent participation in the NG911 transition and provide valuable services to customers utilizing newer communications platforms.").

VI. CONCLUSION

T-Mobile is proud to be part of the voluntary commitment to bring text-to-911 to as many consumers as possible in a short timeframe. It encourages the Commission to recognize, though, that the voluntary commitment is an interim solution, meant to bridge the gap between the legacy 911 systems and future deployment of NG911. Furthermore, the Commission has expressed a number of admirable goals for its implementation of a regulatory framework surrounding the voluntary commitment. T-Mobile urges the Commission to ensure that any mandates it imposes do not place burdens on carriers, PSAPs, or consumers that would impede the near term implementation of an interim text-to-911 solution. It should instead make sure that any new rules are based on the voluntary commitment and designed to support stakeholders, keeping in mind the ultimate goal of full IP-based NG911 deployment.

Respectfully submitted,



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